

What is claimed is:

1. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, the multi-lumen catheter assembly having (a) a multi-lumen catheter tube having a distal portion and a proximal portion, and (b) an attachable hub assembly having a hub body with  
5 a distal portion and a proximal portion, the method comprising the steps of:

making an incision near the area to be catheterized;  
inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized;  
creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the incision near the area to be catheterized;  
routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;  
and  
attaching the proximal portion of the hub body to the distal portion of the catheter tube.

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2. The method of claim 1, the catheter tube having at least a first lumen and a second lumen, the hub body being formed about a first cannula and a second cannula, each of the cannula having a proximal portion and a distal portion, and the hub assembly further having (ii) a  
20 connection cover having a proximal portion and a distal portion, the connection cover fitting axially about the distal portion of the catheter tube, wherein the step attaching the proximal portion of the hub assembly to the distal portion of the catheter tube is further comprised of the steps of:

backfitting the connection cover over the distal portion of the catheter tube; inserting the proximal portion of the first cannula into the first lumen of the distal portion of the catheter tube, and inserting the proximal portion of the second cannula into the second lumen of the distal portion of the catheter tube, to create fluid communication between the first cannula and the first lumen and the second cannula and the second lumen; and

connecting the distal portion of the connection cover to the proximal portion of the hub assembly, such that the catheter tube is securely attached to the hub assembly.

10 3. The method of claim 2, the hub assembly further having (iii) a compression sleeve, the compression sleeve fitting axially about the distal portion of the catheter tube and the proximal portions of the first and second cannulae, wherein the step attaching the proximal portion of the hub body to the distal portion of the catheter tube is further comprised of the steps of:

15 prior to the inserting step of claim 2, backfitting the compression sleeve over the distal portion of the catheter tube; and

after the inserting step of claim 2, compressing the connection between the first and second cannulae and the first and second lumens of the catheter tube by sliding the compression sleeve over the proximal portion of the first and second cannulae that have been inserted into the first and second lumens of the distal portion of the catheter tube.

20 4. The method of claim 2, the proximal portion of the hub body being externally threaded, and the distal portion of the connection cover being internally threaded, wherein the step of connecting the distal portion of the connection cover to the proximal portion of the hub body is

further comprised of the step of:

turning the connection cover so that the threaded portion of the connection cover engages the threaded portion of the hub body.

5 5. The method of claim 4, the threaded portion of the connection cover being female threaded, and the threaded portion of the hub body being male threaded, and wherein the female threaded portion of the connection cover receives the male threaded portion of the hub body.

6. The method of claim 2, the first lumen and the first cannula each having a first indicator associated therewith, and the second lumen and the second cannula each having a second indicator associated therewith, wherein the step of inserting the cannulae into the lumens is further comprised of the steps of:

matching the first indicator associated with the first lumen with the first indicator associated with the first cannula; and

5 matching the second indicator associated with the second lumen with the second indicator associated with the second cannula.

7. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, wherein the multi-lumen catheter assembly is comprised of (a) a multi-lumen catheter tube with 20 a distal portion and a proximal portion, the catheter tube having at least a first lumen and a second lumen, (b) an attachable hub assembly, the hub assembly having a (i) a hub body with a distal portion and a proximal portion, the proximal portion of the hub body being externally threaded, the hub body being formed about a first cannula and a second cannula, each of the

cannula having a proximal portion and a distal portion, (ii) a connection cover having a proximal portion and a distal portion, the connection cover fitting axially about the distal portion of the catheter tube, the distal portion of the connection cover being internally threaded, and (iii) a compression sleeve, the compression sleeve fitting axially about the distal portion of the catheter tube and the proximal portions of the first and second cannulae, the method comprising the steps of:

- making an incision near the area to be catheterized;
- inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized;
- creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the incision near the area to be catheterized;
- routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;
- attaching the proximal portion of the hub body to the distal portion of the catheter tube,
- wherein the step of attaching the hub body to the catheter tube is further comprised of the steps of:
  - backfitting the connection cover over the distal portion of the catheter tube;
  - backfitting the compression sleeve over the distal portion of the catheter tube;
  - inserting the proximal portion of the first cannula into the first lumen of the distal portion of the catheter tube, and inserting the proximal portion of the

second cannula into the second lumen of the distal portion of the catheter tube, to create fluid communication between the first cannula and the first lumen and the second cannula and the second lumen;

5 compressing the connection between the first and second cannulae and the first and second lumens of the catheter tube by sliding the compression sleeve over the proximal portion of the first and second cannulae that have been inserted into the first and second lumens of the distal portion of the catheter tube; and connecting the distal portion of the connection cover to the proximal portion of the hub body by turning the connection cover so that the threaded portion of the connection cover engages the threaded portion of the hub body, such that the catheter tube is securely attached to the hub body.

8. The method of claim 7, the threaded portion of the connection cover being female threaded, and the threaded portion of the hub body being male threaded, and wherein the female threaded portion of the connection cover receives the male threaded portion of the hub body.

9. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, wherein the multi-lumen catheter assembly is comprised of (a) a multi-lumen catheter tube with 20 a distal portion and a proximal portion, the catheter tube having at least a first lumen and a second lumen, (b) an attachable hub assembly, the hub assembly having a (i) a hub body with a distal portion and a proximal portion, the hub body being formed about a first cannula and a second cannula, each of the cannula having a proximal portion and a distal portion, (ii) a connection cover having a proximal portion and a distal portion, the connection cover fitting

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axially about the distal portion of the catheter tube, and (iii) a compression sleeve, the compression sleeve fitting axially about the distal portion of the catheter tube and the proximal portions of the first and second cannulae, the first lumen and the first cannula each having a first indicator associated therewith, and the second lumen and the second cannula each having a second indicator associated therewith, the method comprising the steps of:

- 5 making an incision near the area to be catheterized;
- inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized;
- creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the incision near the area to be catheterized;
- routing the distal portion of the catheter tube through the subcutaneous tunnel through a second end of the subcutaneous tunnel;
- attaching the proximal portion of the hub body to the distal portion of the catheter tube,
- wherein the step of attaching the hub body to the catheter tube is further comprised of the steps of:
  - backfitting the connection cover over the distal portion of the catheter tube;
  - backfitting the compression sleeve over the distal portion of the catheter tube;
  - 20 matching the first indicator associated with the first lumen with the first indicator associated with the first cannula, and inserting the proximal portion of the first cannula into the first lumen of the distal portion of the catheter tube, to

create fluid communication between the first cannula and the first lumen; and  
matching the second indicator associated with the second lumen with the  
second indicator associated with the second cannula, and inserting the proximal  
portion of the second cannula into the second lumen of the distal portion of the  
catheter tube, to create fluid communication between the second cannula and the  
second lumen;  
compressing the connection between the first and second cannulae and the  
first and second lumens of the catheter tube by sliding the compression sleeve  
over the proximal portion of the first and second cannulae that have been inserted  
into the first and second lumens of the distal portion of the catheter tube; and  
connecting the distal portion of the connection cover to the proximal portion of  
the hub body, such that the catheter tube is securely attached to the hub body.

10. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, wherein the multi-lumen catheter assembly is comprised of (a) a multi-lumen catheter tube with a distal portion and a proximal portion, the catheter tube having a at least a first lumen and a second lumen, (b) an attachable hub assembly, the hub assembly having a (i) a hub body with a distal portion and a proximal portion, the proximal portion of the hub body being externally threaded, the hub body being formed about a first cannula and a second cannula, each of the cannula having a proximal portion and a distal portion, (ii) a connection cover having a proximal portion and a distal portion, the connection cover fitting axially about the distal portion of the catheter tube, the distal portion of the connection cover being internally threaded, the first lumen and the first cannula each having a first indicator associated therewith, and the second lumen and

the second cannula each having a second indicator associated therewith, the method comprising the steps of:

making an incision near the area to be catheterized;

inserting the proximal portion of the multi-lumen catheter tube into the area to be  
5 catheterized;

creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the incision near the area to be catheterized;

routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;  
10 attaching the proximal portion of the hub body to the distal portion of the catheter tube,

wherein the step of attaching the hub body to the catheter tube is further comprised of the steps of:

backfitting the connection cover over the distal portion of the catheter  
15 tube;

matching the first indicator associated with the first lumen with the first indicator associated with the first cannula, and inserting the proximal portion of the first cannula into the first lumen of the distal portion of the catheter tube, to create fluid communication between the first cannula and the first lumen; and

20 matching the second indicator associated with the second lumen with the second indicator associated with the second cannula, and inserting the proximal portion of the second cannula into the second lumen of the distal portion of the catheter tube, to create fluid communication between the second cannula and the

second lumen;  
connecting the distal portion of the connection cover to the proximal portion of the hub body by turning the connection cover so that the threaded portion of the connection cover engages the threaded portion of the hub body, such that the catheter tube is securely attached to the hub body.

11. The method of claim 10, the threaded portion of the connection cover being female threaded, and the threaded portion of the hub body being male threaded, and wherein the female threaded portion of the connection cover receives the male threaded portion of the hub body.

12. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, wherein the multi-lumen catheter assembly is comprised of (a) a multi-lumen catheter tube with a distal portion and a proximal portion, the catheter tube having at least a first lumen and a second lumen, (b) an attachable hub assembly, the hub assembly having a (i) a hub body with a distal portion and a proximal portion, the proximal portion of the hub body being externally threaded, the hub body being formed about a first cannula and a second cannula, each of the cannula having a proximal portion and a distal portion, (ii) a connection cover having a proximal portion and a distal portion, the connection cover fitting axially about the distal portion of the catheter tube, the distal portion of the connection cover being internally threaded, and (iii) a compression sleeve, the compression sleeve fitting axially about the distal portion of the catheter tube and the proximal portions of the first and second cannulae, the first lumen and the first cannula each having a first indicator associated therewith, and the second lumen and the second cannula each having a second indicator associated therewith, the method comprising the steps of:

making an incision near the area to be catheterized;

inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized;

5 creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the incision near the area to be catheterized;

routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;

attaching the proximal portion of the hub body to the distal portion of the catheter tube,

10 wherein the step of attaching the hub body to the catheter tube is further comprised of the steps of:

backfitting the connection cover over the distal portion of the catheter tube;

backfitting the compression sleeve over the distal portion of the catheter tube;

15 matching the first indicator associated with the first lumen with the first indicator associated with the first cannula, and inserting the proximal portion of the first cannula into the first lumen of the distal portion of the catheter tube, to create fluid communication between the first cannula and the first lumen; and

20 matching the second indicator associated with the second lumen with the second indicator associated with the second cannula, and inserting the proximal portion of the second cannula into the second lumen of the distal portion of the catheter tube, to create fluid communication between the second cannula and the

second lumen;

compressing the connection between the first and second cannulae and the first and second lumens of the catheter tube by sliding the compression sleeve over the proximal portion of the first and second cannulae that have been inserted into the first and second lumens of the distal portion of the catheter tube; and connecting the distal portion of the connection cover to the proximal portion of the hub body by turning the connection cover so that the threaded portion of the connection cover engages the threaded portion of the hub body, such that the catheter tube is securely attached to the hub body.

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13. The method of claim 12, the threaded portion of the connection cover being female threaded, and the threaded portion of the hub body being male threaded, and wherein the female threaded portion of the connection cover receives the male threaded portion of the hub body.

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14. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, the multi-lumen catheter assembly having (a) a multi-lumen catheter tube having a distal portion and a proximal portion, and (b) an attachable hub assembly having (i) a hub body with a distal portion and a proximal portion, the method comprising the steps of:

20 creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the area to be catheterized;

routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;

making an incision near the area to be catheterized;  
inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized; and  
attaching the proximal portion of the hub body to the distal portion of the catheter tube.

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15. A method for inserting a multi-lumen catheter assembly into an area to be catheterized, the multi-lumen catheter assembly having (a) a multi-lumen catheter tube having a distal portion and a proximal portion, and (b) an attachable hub assembly having (i) a hub body with a distal portion and a proximal portion, the method comprising the steps of:

10 creating a subcutaneous tunnel, wherein a first end of the subcutaneous tunnel is near the area to be catheterized;

making an incision near the area to be catheterized;

15 routing the distal portion of the catheter tube through the subcutaneous tunnel beginning at the first end and exiting through a second end of the subcutaneous tunnel;

inserting the proximal portion of the multi-lumen catheter tube into the area to be catheterized; and

attaching the proximal portion of the hub body to the distal portion of the catheter tube.

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